Low-cost Reflex Interface

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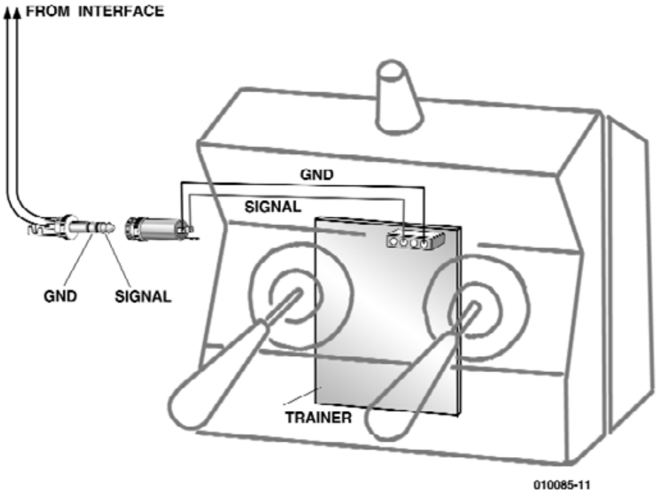
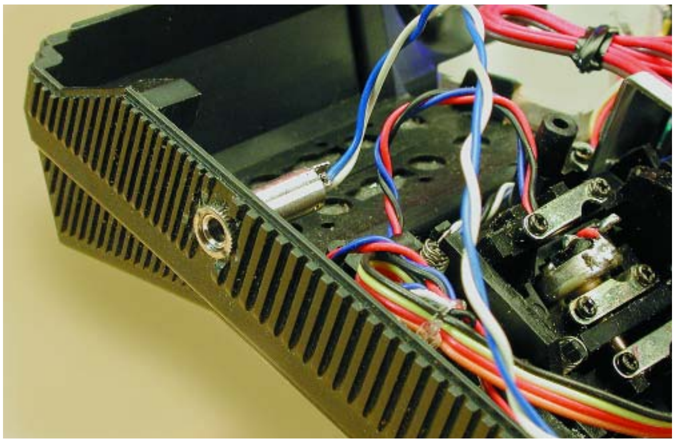
This interface links a Futaba FC-16 R/C transmitter to the parallel interface of a Reflex model aircraft simulator. This is a commercially available simulator that has been specially developed for model aircraft. Included with this program is an interface with several adapters that allow you to use your own transmitter to fly the virtual airplanes. This has the advantage that you don't have to get used to the PC joystick or keyboard, but that you can continue to use the same stick, switches, etc as you would use during real flight

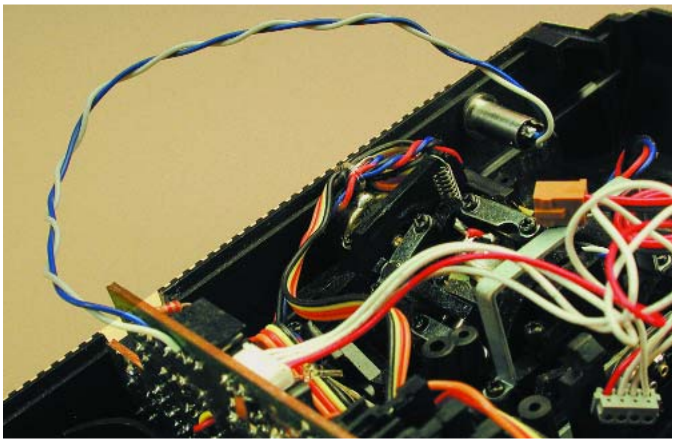
R/C transmitters sometimes have a so-called teacher/student connection. This connection makes it possible to link two transmitters together and switch between the two for flying the model. This teacher/student-connection is perfect for use with a Reflex simulator, but unfortunately most senders don't have such a connection as standard. This is only made available as a (needlessly expensive) extra. The addition of this connector is relatively simple, as can be seen in the accompanying drawing. The reason for using a 3.5 mm stereo jack plug instead of the usual DIN plug is that the Reflex interface itself also uses a 3.5 mm jack for its input. The adapters that are supplied for the various makes of R/C transmitters are therefore superfluous.

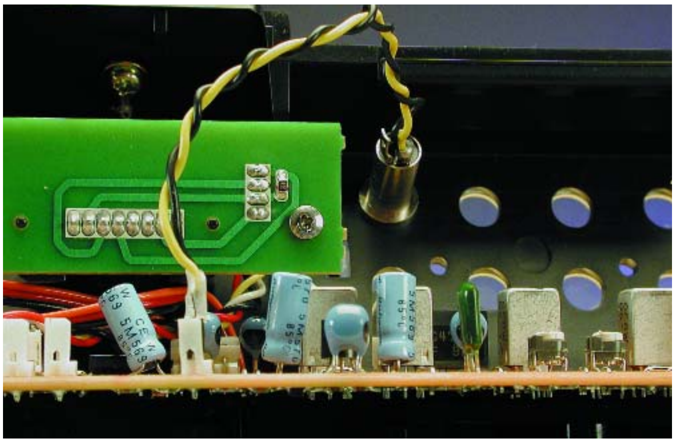


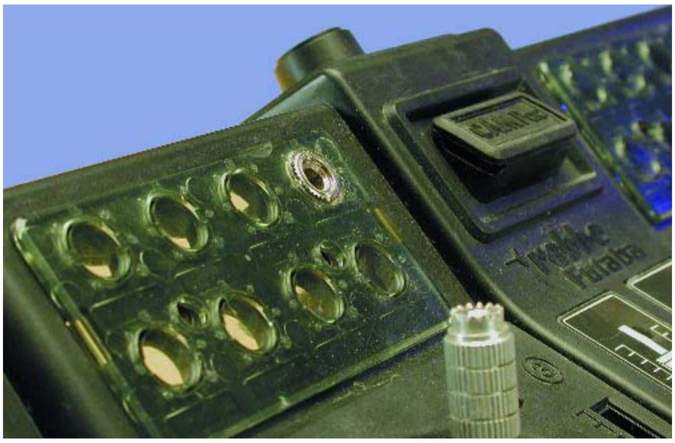
A further advantage is that the jack plug fits snugly in the holes meant for switches and mini potentiometers. There is therefore no need to make another hole for the connector in the transmitter case.

For the modification you should refer to the photos, one of









which shows the connector in a Futaba transmitter, and the other in a Graupner transmitter. Please note that Futaba transmitters make use of connectors with a pitch of 2 mm (instead of 2.56 mm). Normal (imperial) SIL connectors (with a 0.1 inch pitch) are therefore unsuitable for use with these transmitters!

The right connectors may be obtained from Conrad Electronics, part number 672-348.

The connection described here should in principle be suitable for use in other transmitters as well, but you will have to find the right signal in the transmitter yourself (usually present on a connector). The relevant signal should look like that shown on the oscilloscope screen-shots printed here. Sometimes there is a label with the words ‘TRAINER’ or ‘EXTERNAL COMMAND’ on the PCB near a connector. One of the pins on that connector is likely to have the required signal.

To avoid any confusion, we would like to make one thing clear: this connection is not suitable for teacher/student operation!

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